

Native Oaks and Other Native Trees



Bigleaf Maple



Black Oak



California Buckeye

When is a Tree Native?

In California, a tree is usually considered native to an area if it grew there before European contact. We know which tree species these were by examining the artifacts and oral history of the indigenous people and the reports and drawings made by the first European explorers.

We use characteristics of climate and soils rather than geopolitical boundaries to define regions in which we find certain native trees. A tree that thrives in the moist air and moderate temperatures found along the Central Coast would be poorly adapted to the dry air and temperature extremes in the eastern Sierras. Rather than simply stating that a tree is native to California, we need to further clarify the specific environmental region considered to be native habitat for that species. Simply put, plants that are native to an area are adapted to grow and reproduce in the environmental conditions found in that particular area.

The environmental conditions are especially important in western Placer County because many diverse ecosystems exist in proximity to each other. Elevations range from a few hundred feet to nearly 3,000 feet above sea level – and within this area, dramatic variations in temperature, precipitation, and wind occur. Soil types in the county are also quite variable, reflecting the diverse underlying geology of the Sierra Nevada foothills and valley floor. Other important environmental factors include availability of ground or surface water during the dry season and exposure to sunlight.

Valley oak leaves with acorn (upper left) and California incense cedar scale-leaves (lower right)



Young bigleaf maple with mixed oaks and conifers

Why are Native Trees Important?

Tree species that are native to a locale are very well adapted to the naturally occurring site conditions. This adaptation can result in lower maintenance costs and eliminate the need for supplemental irrigation, specialized fertilizers, herbicides, soil amendments, or protection from wind, sun, and cold. Using fewer chemicals to keep trees healthy also reduces the chance that runoff containing these chemicals will find its way into our streams and rivers.

Native trees are important for preserving the other native plants that grow in association with the trees. Trees influence sunlight, erosion, soil moisture, ground temperature, exposure to rain and cold, and nutrients in the soil. If the canopy of naturally occurring trees is eliminated, the understory – the community of plants that grow under the trees – will also be affected.

Native trees are linked to the well-being of the insects, birds, and wildlife species that naturally occur in an area. Over many, many generations of living in proximity to these native trees, some of these animal species have evolved to rely on the trees and the associated understory plants, such as shrubs, grasses, and wildflowers, to meet their specialized food, shelter, and breeding needs.

Another important reason to protect and plant native trees is to preserve the unique landscape appearance that helps give a region its individual character. Regional character is increasingly threatened by the trend to make neighborhoods and commercial centers so similar that we cannot tell one city from another. By preserving regional landscape character, we can help offset this homogenization. Our sense of identity and belonging is enriched through our association with these unique places that we claim as our own.



Blue Oak



California Bay Laurel



Fremont Cottonwood



California Incense Cedar



Canyon Live Oak



Madrone

What Trees are Native to Western Placer County?

Western Placer County has quite a diverse array of native tree species. The table below lists some of the most frequently found trees by both their scientific and common names.

Some of these trees are evergreens, which means they stay green year-round. Most of the evergreen trees have needles, but the madrone and the California bay laurel have leaves. Some of the native trees are considered riparian species, which means they are adapted to growing in places near streams and rivers. The roots of these trees tolerate periodic flooding at certain times of the year or may even require more soil moisture than other species. Upland tree species are usually found in locations where streams and rivers do not influence the soil moisture.

Several native tree species are adapted to both riparian and upland conditions, depending on other factors. For example, bigleaf maple may be found growing next to a stream in a relatively

open, sunny location and also on cool, shady north-facing hillsides. Some native trees are found throughout a large area of western Placer County. White alders may be found growing next to valley streams in Roseville as well as mountain streams above Colfax. Other trees have a more limited range. The Douglas fir requires the cooler summer temperatures found at elevations above 1,000' (Auburn), while the valley oak is rarely found at elevations above 2,000 feet.

Some native trees, such as the California buckeye, western redbud, and box elder are relatively small at maturity, and could be considered large shrubs. Other species may grow to be very tall, with heights in excess of 100 feet. Some species have a great deal of variability in mature height and how long it takes to reach that height depending on site conditions such as exposure to sunlight, competition from other plants for water and nutrients, and temperature.

Scientific Name	Common Name	Evergreen	Riparian	Upland	Elevation	Height
<i>Acer macrophyllum</i>	Bigleaf maple		■	■	<5,000'	15'-100'
<i>Acer negundo</i>	Box elder		■		<6,000'	20'-50'
<i>Aesculus californica</i>	California buckeye		■	■	<4,000'	12'-21'
<i>Alnus rhombifolia</i>	White alder		■		<5,000	30'-100'
<i>Arbutus menziesii</i>	Madrone	■		■	300'-4,500'	30'-125'
<i>Calocedrus decurrens</i>	California incense cedar	■		■	1,000'-7,500'	70'-150'
<i>Cercus occidentalis</i>	Western redbud			■	<4,000'	8'-21'
<i>Cornus nuttallii</i>	Pacific dogwood			■	<6,000'	35'-75'
<i>Fraxinus latifolia</i>	Oregon ash		■		<5,500'	30'-75'
<i>Juglans hindsii</i>	California black walnut		■	■	150'-2,800'	45'-75'
<i>Pinus ponderosa</i>	Ponderosa pine	■		■	450'-7,200'	75'-200'
<i>Pinus sabiniana</i>	Foothill pine	■		■	450'-3,000'	50'-120'
<i>Platanus racemosa</i>	California sycamore		■		<4,000'	30'-75'
<i>Populus fremontii</i>	Fremont cottonwood		■		<5,600'	40'-90'
<i>Pseudotsuga menziesii</i>	Douglas fir	■		■	1,000'-6,700'	100'-200'
<i>Quercus chrysolepis</i>	Canyon live oak	■		■	<6,500'	20'-50'
<i>Quercus douglasii</i>	Blue oak			■	<3,600'	20'-65'
<i>Quercus kelloggii</i>	Black oak			■	600'-7,200'	30'-75'
<i>Quercus lobata</i>	Valley oak		■	■	<2,000'	35'-100'
<i>Quercus wislizenii</i>	Interior live oak	■		■	<4,500'	30'-75'
<i>Umbellularia californica</i>	California bay laurel	■	■	■	<5,000'	20'-90'



Remnant native oak woodland amid development

Why are Native Trees Disappearing?

Throughout the developed communities and neighborhoods of western Placer County, more and more of our native tree species are being replaced by non-native species. We have made major changes to the environment by introducing more water during the dry season, creating impervious paved areas, rerouting natural drainage ways, and replacing the naturally occurring vegetation with species that we think are more compatible with the function of these new urban places. For example, we may favor trees that never grow very tall to avoid conflicts with overhead utilities, or trees that don't drop fruit onto sidewalks or parked cars. Sometimes the desire to use a certain tree species is simply for aesthetic qualities, such as attractive spring flowers or fall foliage color. While these are all good reasons for selecting certain non-native tree species as part of the urban design process, preserving native trees and including them in our landscapes, where possible, is important.

Oak tree on left is suffering from overwatering while trees on right without lawn are healthy



Preservation of Native Trees

One of the best ways to ensure the presence of these native trees in western Placer County is to preserve the trees that are already here. When native trees are destroyed, they can of course be replanted, but it takes decades before these young trees will reach maturity. Young trees are also subject to disease and damage that might prevent them from ever reaching maturity. During the decades while these trees are attempting to re-establish, the benefits they provide – including environmental and aesthetic values – are not the same as those provided by the mature trees they are intended to replace.

Tree Ordinances

All areas of western Placer County are regulated either by county or local ordinances that address preservation of native oak trees. Some of these ordinances also address other native tree species and landmark trees that have historic or cultural significance. Because these ordinances are periodically updated, check with the local jurisdiction to get the most current regulations on what types of impacts are prohibited and for what species. Contact information is provided in the *Resources* section of this publication.

Designing with Existing Native Trees

We have many opportunities to preserve native trees. The most obvious is to ensure we consider existing native trees in the design of any new transportation, development, or home improvement project. Look for ways to relocate or orient structures to minimize the number of trees that will be affected by the project. Consider also how to make the existing trees an integral part of the design rather than an obstacle. For example, locating a house north of a stand of existing mature trees can provide significant energy savings by reducing the need for summer air conditioning. Trees can also provide a focal point or help buffer undesirable views in a way that is more pleasing and less expensive than a fence or other structure.

To effectively design for native tree preservation, become familiar with the tree species on the site and what conditions these species need to stay healthy. A professional arborist can help identify existing trees and provide useful information on the best ways to avoid damage both during and after the project. In addition to removal, native trees loss can also result from the damage to



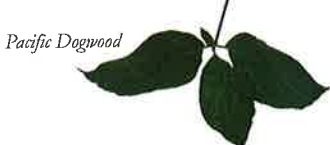
Leave room for trees to reach maturity



Interior Live Oak



Douglas Fir



Pacific Dogwood



Ponderosa Pine



California Sycamore



Valley Oak

trees from construction activities and damage over time because of physical changes to the site and its associated uses. Improper construction practices, such as stockpiling materials on tree roots or cutting through roots to lay utility trenches, can lead to the eventual death of a tree that was never intended to be removed. Additional information is available in the companion publication “Protecting Trees During Construction.”

Companion Plants and Existing Native Trees

If you buy a home or property that has existing native trees, it is important to adjust ornamental landscape practices to be consistent with the natural conditions the native species require. For example, one of the most common reasons why homeowners lose large, healthy native oak trees is the practice of planting lawns or other non-native plants under the trees. These non-native plants require frequent watering in the summer, but oaks require very little, if any, summer water. In fact, summer watering creates warm, moist conditions in which certain diseases that are very damaging to many native oak species are most likely to occur. It can take several years for the damage to appear, and by then the damage may be irreparable.



Low Oregon grape (mahonia nervosa) under Douglas fir

To avoid these problems, become familiar with the conditions your native trees need to thrive and select only ornamental companion plants that do well in the same conditions. Limit the



Shaded fuel break

amount of planting directly beneath the tree to prevent damage to roots. Consider using some of the native perennials, groundcovers, and shrubs that naturally grow in the same areas as the native trees because these are naturally adapted to the same conditions as the trees. Nurseries that specialize in native plants are often good resources for information about native and non-native plants that are compatible for planting with native trees. If you don’t know the type of native trees on your property, bring a photo and some leaves to the nursery, or consider hiring an arborist to identify your trees for you.

Fuel Load Management

In the many rural areas of western Placer County are large stands of oak woodland or evergreen forests interspersed with homes or neighborhoods. In these areas, fuel load management is another important tool to preserve native trees. Proper fuel load management techniques simultaneously reduce fire danger while preserving the ecological and aesthetic values of forests and woodlands. Practices such as removing ladder fuels, implementing shaded fuel breaks, and thinning young trees and dense understory reduce the potential for a large, catastrophic fire that could potentially destroy many trees as well as structures. These practices also encourage healthier forests by reducing competition for light, nutrients, and water.



Native oak savanna

Companion Plants

Genus Species	Common Name	CA Native	Evergreen	Deciduous	Height	Spread
Shrubs						
Abelia grandiflora	Glossy abelia		■		3–7’	5’
Arbutus unedo	Strawberry Tree		■		25’	8’
Arctostaphylos densiflora	Manzanita	■	■		3–5’	7’
Berberis darwinii	Darwin’s barberry		■		5–10’	4–7’
Buddleia davidii	Butterfly bush			■	10–12’	10’
Carpenteria californica	California bush anemone	■	■		4–6’	4–6’
Ceanothus ‘Concha’	Wild lilac	■	■		6–7’	6–8’
Cercis occidentalis	Western redbud	■		■	10–18’	10–18’
Daphne odorata	Fragrant daphne		■		4’	6’
Diplacus hybrids	Monkey flower	■	■		5’	5’
Galvezia speciosa	Island bush snapdragon	■	■		3’	5’
Heteromeles arbutifolia	Toyon	■	■		6–10’	6–10’
Myrtus communis	Myrtle		■		5–6’	4–5’
Philadelphus virginalis	Mock orange			■	6–8’	6–8’
Plumbago auriculata	Cape plumbago		■		6’	8–10’
Rhamnus californica	Coffee berry	■	■		3–15’	8’
Rhus integrifolia	Lemonade berry	■	■		3–10’	3–10’
Ribes sanguineum	Flowering current	■		■	5–12’	5–12’
Rosa californica	California wild rose	■		■	3’	2–3’
Salvia greggii	Autumn sage		■		1–4’	2–4’
Groundcover						
Arctostaphylos hookeri	Monterey manzanita	■	■		1–4’	6’
Baccharis pilularis ‘Twin Peaks’	Coyote Bush	■	■		8–24’	6’
Ceanothus ‘griseus horizontalis’	Carmel creeper	■	■		1½–2½’	5–15’
Cistus salvifolius	Sageleaf rock rose			■	2’	6’
Rosmarinus officinalis cultivars	Rosemary		■		1–6’	1–6’
Grasses						
Elymus glaucus	Blue wild rye	■	■		3–4’	n/a
Festuca californica	California fescue	■	■		2–3’	3’
Muhlenbergia rigens	Deergrass	■	■		3–4’	4’
Pennisetum alopecuroides	Fountain grass			■	3–4’	5’
Stipa pulchra	Purple needlegrass	■		■	2–3’	n/a



California Black Walnut

Western Redbud



White Alder



Foothill Pine



Oregon Ash

Box Elder



Property owners can get information on defensible space and fuel load management practices by contacting the California Department of Forestry and Fire Protection (CDF), the Placer County Fire Safe Alliance through the Placer County Resource Conservation District, or local fire protection districts and departments. The Placer County Resource Conservation District can also provide information on grant programs that offer financial assistance to property owners for fuel load management activities.

Including Native Trees in the Landscape

Another way to support the cultivation of native trees in western Placer County is to look for appropriate opportunities to plant these species instead of non-native trees. Native trees can be planted as single specimens, in rows as screens, or in drifts depending on the available space, type of tree, and intended uses of the site.

In many circumstances native trees can be a wonderful addition to the landscape, including suburban yards, large rural home sites, pastures, hedgerows, parks, roadsides, and public sites. If you have a large parcel or rural property, you may want to consider using a portion of it exclusively to provide habitat and cover for wildlife and birds by planting native tree species in that area.

Picking the Right Native Trees

As with any tree planting decision, it is important to select species that are adapted to the site conditions and compatible with the intended uses of the site. Spend some time observing the conditions of the site where you want to plant native trees. Notice how much sun, rain, and wind the site receives. Try to identify other plants that are already growing there to get further clues about soil and drainage. It is best to observe a site for a full year because conditions can vary dramatically from summer to winter. Look also at neighboring properties or nearby undeveloped parcels to see what native trees may still be growing there and to get ideas about tree spacing and companion plants.



Park designed to protect existing native oaks

Be realistic about how much space will be needed for the tree to reach its mature size without damaging structures or causing problems with other landscape areas. Consider the intended uses for the area and ensure that they are consistent with the growth habits, cultural requirements, and appearance of the native trees you are considering. Additional information about tree selection in general is available in the companion publication "Proper Tree Selection." Several online databases now provide information on the growth habits and cultural requirements of particular native tree species.

Education

After you have defined your parameters for selecting trees, become educated about which native trees fit your needs. Many excellent books and online resources can help with this task. Arborists and local native plant nurseries are also good resources. At a minimum, make sure you know the following information about any native trees you are considering:

- How much sun/shade does it need?
- How much water does it need and at what time of year?
- Does it have special soil requirements?
- How quickly does it grow?
- What is its mature height and diameter?
- What is the altitude of its native range?
- Are there characteristics that would limit its use?

It is also a good idea to look at many actual examples or pictures of the trees you are considering. Look for examples in different circumstances, such as in the wild, in a park, and in a yard, and at different times of year and stages of growth. Some native tree species are quite variable in habit and appearance depending on where they are growing, access to sun and water, and age.

Sources for Native Trees

You can obtain native trees for new plantings from several sources, depending on the species and age of the tree.

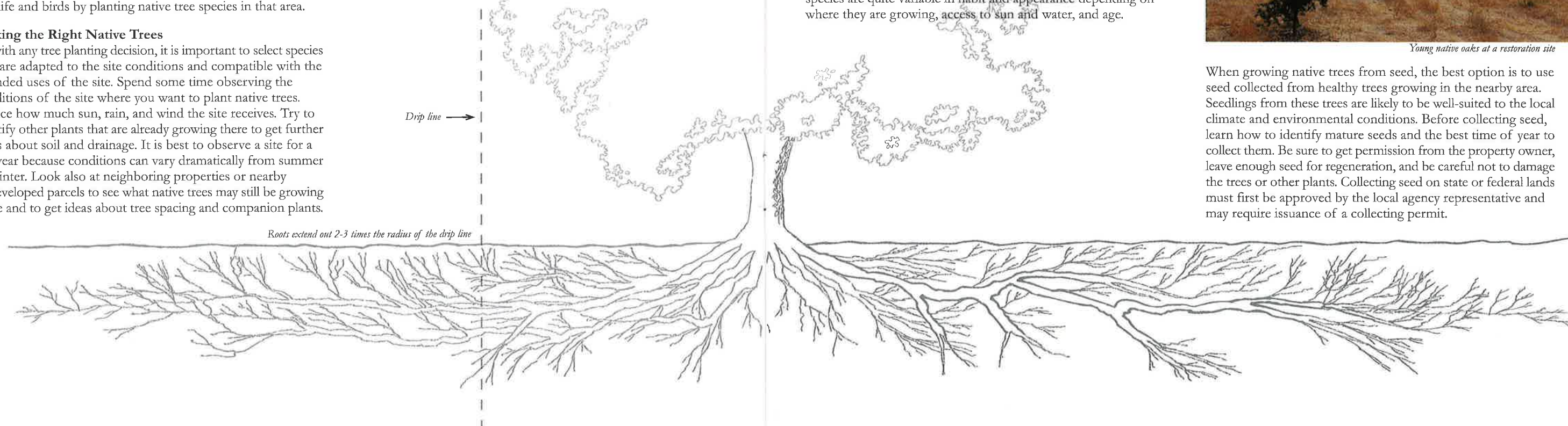
Growing from Seed

Seed germination can be very easy for certain native tree species such as ponderosa pine and Douglas fir, while others require special preparation and handling during germination. For very slow growing trees, such as some oaks and California bay laurel, starting from seeds may not be a very attractive option. However, planting from seed eliminates the risk of damaging roots during transplanting, and the shock plants undergo when moved from one location to another. If planting from seed, extra care will need to be provided during the early years to protect seedlings from browsing animals and rodents, and to ensure that they are not overgrown by more aggressive grasses and shrubs.



Young native oaks at a restoration site

When growing native trees from seed, the best option is to use seed collected from healthy trees growing in the nearby area. Seedlings from these trees are likely to be well-suited to the local climate and environmental conditions. Before collecting seed, learn how to identify mature seeds and the best time of year to collect them. Be sure to get permission from the property owner, leave enough seed for regeneration, and be careful not to damage the trees or other plants. Collecting seed on state or federal lands must first be approved by the local agency representative and may require issuance of a collecting permit.



Roots extend out 2-3 times the radius of the drip line



Bigleaf Maple



Black Oak



California Buckeye

Nursery Grown

Many native tree species can be purchased as seedlings or young trees from nurseries that specialize in the cultivation of native plants. Try to purchase trees grown by local nurseries whenever possible because these trees may be better adapted to local conditions than those grown in other regions. Plants may be grown in containers or in the field. Field-grown plants are usually transplanted during the dormant season, when they are dug up from the field with the root ball intact, and wrapped in burlap. The best time and techniques for transplanting, site preparation, and follow-on care will vary from species to species. This information should be available from the nursery.

In general, purchase native trees when they are young and the root systems are relatively small because they are less prone to damage during transplanting. This is especially true of native oaks. In just a few seasons, a small seedling only a year or two old can often reach the same height as a larger tree several years old that is planted at the same time. This is because younger trees establish more readily and suffer less transplant trauma than larger trees. Younger trees are also less expensive.

Some native plant nurseries offer a limited selection of tree seedlings through internet or catalog sales. When possible, try to purchase seedlings that have been grown from seed that originates in the same area where the trees will be planted. Also verify that the information provided about mature height and care is applicable to your locale.

Collecting in the Wild

Collecting native trees or seedlings from county, state, and federal lands is routinely prohibited, except in very limited circumstances that require a special permit. Such collection has the potential to damage other sensitive or protected plants in the process, and the success rate of such transplants is usually not high. Collection in the wild could easily damage roots, obtain insufficient root ball mass, or result in trees dying during transport to the new site. The conservation of our native forests and woodlands relies on successful regeneration and could easily be compromised if the public routinely removed the young seedlings.

In a few situations, limited numbers of native tree seedlings might be collected without causing such problems. On private property, where access is limited, property owners might be able to collect and transplant young seedlings of certain abundant and easily transplanted



Blue oak seedling

species, such as California incense cedar, bigleaf maple, or Pacific dogwood. In such circumstances, it is still important to use care to protect other plants and to leave enough seedlings for future growth. Such harvesting is best done during the dormant season or very early spring, when the weather is cool and moist. The trees' roots should be disturbed as little as possible and kept moist while being relocated to the planting site. The trees should be replanted as soon as possible.

Caring for Native Trees

Care of existing native trees is often best accomplished by leaving them alone and limiting the degree of human impact on their environment. Remember, native trees are genetically adapted to thrive in the naturally existing local conditions. Above all, minimize activities within the tree's root zone, which is anywhere from 1½ to 2 times the diameter of the canopy. The most sensitive part of the root zone is the area nearest the base of the tree (the root crown), especially for oaks. This is the area that is most susceptible to injury and disease. A rough estimate of this area is half the distance from the trunk to the edge of the canopy. Avoid all changes to the existing grade and other disturbance such as watering, fertilizing, and planting within this area. Limit such changes as much as possible to the remaining areas of the root zone.

Other native tree care tips include:

- Adjust irrigation to adjacent areas to prevent an increase in the amount of water the tree is accustomed to receiving. Established oaks are especially sensitive to summer watering.
- Carefully follow application directions when applying herbicides, pesticides, or fertilizers to adjacent planting areas to keep these substances away from native trees.
- Pruning is normally not required for native trees except to remove broken or damaged branches. Use correct pruning techniques to prevent further damage. Proper pruning cuts help the wound heal more quickly and limit opportunities for infestation by pests and disease. A professional tree service is often the best choice, especially for large trees with heavy limbs.
- Take note of the seasonal variability displayed by the trees so any abnormal changes in leaf color, leaf drop, growth, etc. will be apparent.
- As your native trees age, have them evaluated periodically by a certified arborist to ensure that they are healthy and sound.

Resources

Information on Native Oak Care

"Living Among the Oaks: A Management Guide for Landowners." University of California Cooperative Extension, Natural Resources Program. Sharon G. Johnson.

"Care of California's Native Oaks." Bulletin of the California Oak Foundation. Edited by Sharon G. Johnson and Sarah S. Gustafson. www.californiaoaks.org/ExtAssets/CareOfCAsNativeOaks.pdf

"Compatible Plants Under and Around Oaks." California Oak Foundation. Bruce W. Hagen, Barrie D. Coate, and Keith Oldham. www.californiaoaks.org/ExtAssets/CompatiblePlantsUnder&AroundOaks.pdf

Information on Fuel Load Management

Placer County Resource Conservation District
Placer County Fire Safe Alliance
251 Auburn Ravine, Suite 107
Auburn, CA 95603-3719
(530) 885-3046 ext. 119

California Department of Forestry and Fire Protection
www.fire.ca.gov/fire_prevention/fire_prevention.php

Information on Native Tree Characteristics and Culture

CalFlora
1700 Shattuck Av #198
Berkeley, CA 94709
Phone: (510) 528-5426
www.calflora.org/

PLANTS Database
U.S. Department of Agriculture
Natural Resources Conservation Service
National Plant Data Center
Baton Rouge, LA 70874-4490 USA
plants.usda.gov

The California Oak Foundation
Phone: (510) 763-0282
www.californiaoaks.org

California Native Plant Society
(916) 447-2677
www.cnps.org

University of California Cooperative Extension
Placer County Master Gardener Program
ceplacer.ucdavis.edu/Master_Gardener803/

Native Plant Nursery Directory

PlantNative
www.plantnative.org/nd_ca.htm

Finding a Certified Arborist

The International Society of Arboriculture (ISA)
ww2.champaign.isa-arbor.com

The American Society of Consulting Arborists (ASCA)
www.asca-consultants.org

Information on Local Tree Regulations

Placer County
Community Development Resource Agency
Planning Department
3091 County Center Drive
Auburn, CA 95603
Phone: (530) 745-3000
www.placer.ca.gov/Departments/CommunityDevelopment/Planning/Documents/Ordinances.aspx

City of Auburn
Community Development Department
1225 Lincoln Way, Room 3
Auburn, CA 95603
Phone: (530) 823-4211, ext. 3
www.auburn.ca.gov

Town of Loomis
Planning Department
6140 Horseshoe Bar Road, Suite K
Loomis, CA 95650
Phone: (916) 652-1840
www.loomis.ca.gov/index.php?rootPos=17

City of Rocklin
Community Development Department
Planning Division
3970 Rocklin Road
Rocklin, CA 95677
Phone: (916) 625-5160
www.rocklin.ca.gov/government/development/planning/permits/oak_tree_removal_permit.asp

City of Roseville
Planning & Redevelopment Department
311 Vernon Street
Roseville, CA 95678
Phone: (916) 774-5276
www.roseville.ca.us/planning/planning_department_permits/tree_permits.asp